

SECTION 4 - DESIGN REQUIREMENTS

4.1 STREETS

4.1.1..... Classification of Streets

Each subdivision way shall be classified as a major or minor street or as a common driveway as defined in Section 2 for the purpose of establishing applicable design and construction standards. The Board shall determine the classification of all ways.

4.1.2 Location

4.1.2.1 General

- a) All streets in the subdivision shall be designed so that, in the opinion of the Board, they will provide safe vehicular and pedestrian travel and an attractive street pattern through curvilinear street layout whenever possible, and they will obtain the maximum safety and amenity for the subdivision.
- b) The proposed streets in the subdivision shall be so designed as to minimize cut and fill. Cuts or fills greater than four (4) feet are considered significant and, in addition to the specific provisions of these Regulations, additional design and/or construction provisions may be required by the Board. Proposed grades within the right-of-way, including any cul-de-sac, shall not be more than six feet (6') above or below existing grade unless specifically authorized by the Planning Board in unusual topographic circumstances.
- c) The proposed streets and sidewalks shall conform in location to any existing and proposed plans of the Board, including the Master/ Comprehensive Plan as adopted in whole or in part by the Planning Board, and, where required by the Board, to the existing, proposed and anticipated street system.
- d) Provision satisfactory to the Board shall be made for the proper projection of streets or for access to adjoining property, whether or not subdivided.
- e) Reserve strips prohibiting access to streets or adjoining property shall not be permitted except where, in the opinion of the Board, such strips shall be in the public interest.

4.1.2.2 Access from Public Ways

- a) All streets and/or common driveways in a subdivision wholly or partially within the Town of Grafton must be able to be reached directly (without leaving the Town of Grafton) from a public way or ways in the Town of Grafton.
- b) Where the street system within the proposed subdivision does not intersect with or have, in the opinion of the Planning Board, adequate access from an existing public way, the Board may require, as a condition of approval, that such adequate access be provided by the Applicant, and/or that the Applicant make physical improvements to and within such existing or proposed way of access in accord with the design and construction requirements of these Rules and Regulations, from an appropriate street

within a subdivision to the nearest public way most suitable in terms of width, grade and construction.

- c) Where the physical condition or width of a public way from which a subdivision has its access is considered by the Board to be inadequate to carry the traffic expected to be generated by such subdivision, the Board may require the subdivider to dedicate a strip of land for the purpose of widening the abutting public way to a width at least commensurate with that required within the subdivision, and to make physical improvements to and within such public way to the same standards required within the subdivision. Any such dedication of land for purpose of way and any such work performed within such public way shall be made only with permission of the governmental agency having jurisdiction over such way, and all costs of any such widening or construction shall be borne by the subdivider.

4.1.3 Alignment

4.1.3.1 Intersections shall not be disjointed, or separated.

4.1.3.2 The minimum centerline radii of curved streets shall be as follows:

Major Streets:.....four hundred feet (400')

Minor Streets:one hundred feet (100')

Greater radii may be required at the discretion of the Planning Board.

4.1.3.3 A tangent at least one hundred and fifty feet (150') in length shall separate all reverse curves on all streets except where at least one (1) radius is five hundred feet (500') or more or where the radius of curvature of both the curves is in excess of two (2) times the minimum specified in Section 4.1.3.2

4.1.3.4 a) Intersections involving Major Streets shall be at right angles. Intersections of Minor Streets shall be laid out as nearly as possible at right angles, but in no case shall minor streets intersect at less than 60 degrees from the tangent.

b) When the intersection of two (2) streets varies more than ten (10) degrees from a right angle, the radius of the curve at the obtuse angle may be less than thirty feet (30') and of the acute angle may be greater than thirty feet (30') to the extent approved or required by the Planning Board.

4.1.3.5 Property lines at street intersections shall be rounded or cut back to provide for a radius of not less than thirty feet (30').

4.1.3.6 Streets shall be laid out so as to intersect with adjacent streets or adjacent unsubdivided land at intervals of from six hundred feet (600') to twelve hundred feet (1200'). In special instances the Planning Board may approve a right-of-way for a future street to remain in fee ownership of the applicant, in lieu of actual construction of a cross street.

4.1.3.7 Roadway centerlines shall be colinear with the centerline of the roadway right of way. The distance between edge of pavement and edge of right of way shall remain constant.

4.1.4 Width

4.1.4.1 **Right of Way Width**

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- a) The minimum width of right-of-way shall be as follows:
 Major Streets:.....sixty feet (60')
 Minor Streets:fifty feet (50')
 - b) When a minor street will provide the only access for lots fronting on a length in excess of five hundred feet (500') or where, in the opinion of the Board it is appropriate, the Board may require a greater right-of-way than that specified above and/or may require a divided roadway.

4.1.4.2 **Pavement Width**

- a) Minor Street - Ctwenty-two (22) feet minimum
- b) Minor Street - Btwenty-six (26) feet minimum
- c) Minor Street - Athirty (30) feet four (4) inches minimum
- d) Major Streetsthirty-eight (38) feet minimum

- 4.1.4.3 The edge of right of way, between the pavement and the right of way lines, shall be graded such that surface runoff cannot enter, nor exit, the right of way.

4.1.5 **Grade**

- 4.1.5.1 The centerline grade for any street shall be not less than eight-tenths of one percent (0.8%).

- 4.1.5.2 The maximum centerline grade for streets shall be as follows:

	Single Family Area	Multi Family and Non-Residential Area
Major Street	Five percent (5%) on straightaways; Three percent (3%) on curves	Three percent (3%)
Minor Street	Eight percent (8%).....	Four percent (4%)
Common Drive	Ten percent (10%)	

4.1.5.3 **Vertical Curves**

Where changes in grade exceed one-half of one percent (0.5%), vertical curves will be provided. The minimum length (k value) of vertical curves shall be designed in accordance with the following:

$$L = K (G1 - G2)$$

G = Grade in percent

L = Length in feet

The values for K are listed below:

Major streets, in an Intensity Area, <u>or</u> as determined by the Planning Board	55	55
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Minor Streets.....	28	35
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Vertical curves will not be included within any required leveling area.

4.1.5.4 **Cross Pitch**

Roadways shall have a cross slope of two percent (2%) or one-quarter inch (1/4) per foot.

4.1.5.5 **Super Elevation**

Where curves and grades combine to create potentially dangerous driving conditions, the Board may require a suitable amount of super elevation of the curves or other protection.

4.1.5.6 **Leveling Areas**

- a) All Minor Streets shall have a leveling zone which extends at least one hundred (100) feet from the intersection of street right of way lines, with a maximum road grade of three (3) percent.
- b) All Major streets shall have a leveling zone which extends at least two hundred (200) feet from the intersection of street right of way lines, with a maximum road grade of two (2) percent.

4.1.6 **Dead End Streets**

- 4.1.6.1 Dead end streets shall be discouraged by the Board, except where such streets create frontage for lots in excess of minimum area requirements of the Zoning By-Law and which are served by minor streets or common driveways.
- 4.1.6.2 The length of dead end streets shall be measured from the right-of-way line of the intersecting street to the center of the turnaround.
- 4.1.6.3 However, if they are necessary for subdivisions with minor streets or common driveways, dead end streets and their extensions or segments, if any, shall not be shorter than one hundred fifty feet (150'), nor longer than five hundred feet (500').
- 4.1.6.4 In the unusual event that topography or other site conditions justify a dead end street longer than five hundred feet (500'), and where there is a substantial public or conservation benefit to be achieved, the Planning Board may relax these standards. Any waiver request regarding this provision shall require the Board to specify the particular public and/or conservation benefit to be realized, and shall be referred by the applicant to the Police Chief, Fire Chief, Director of Public Works and Conservation Commission for their review and comment on this specific issue prior to the Board's action on such request.

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- 4.1.6.5 In the event a dead end street is allowed, the plans shall show a roadway easement from the end of the dead end street to adjacent property. Such easement shall be demonstrated to be reasonably developable in accordance with these regulations.
- 4.1.6.6 If a dead end street is subsequently extended beyond the required turn-around, any easement other than land required for the extension of the roadway may be relinquished to the adjacent properties. Until such extension is constructed, no land lying in the easement may be used in determining the area or frontage of any lot to determine conformity with the minimum requirements under the Zoning By-Law of the Town.
- 4.1.6.7 Dead end streets shall be provided at the closed end with a turnaround having an outside right of way diameter of one hundred feet (100') unless a greater diameter is required by the Board. The turn-around or stub shall be located at the property line
- 4.1.6.8 A snow easement and associated curb cut shall be provided along the outside of the turnaround and clearly marked on site at the end of the dead end streets. When the contours of the land make the outside impractical, the snow easement shall be located elsewhere as directed by the Planning Board, with the advice of the Superintendent of Streets. The minimum size of the snow easement shall be fifteen feet (15') deep by thirty feet (30') wide.

4.1.7 Street Names

Proposed street names and walkway names shall be approved by the Police Department and shall satisfy emergency service requirements, at the time of submission for Planning Board consideration.

4.1.8 Streets in More Than One Town

- 4.1.8.1 Each lot in a subdivision must be served by an approved way lying within the Town bounds.
- 4.1.8.2 If a subdivision is divided by a Town boundary, the Planning Board shall condition approval of the Definitive Plan on approval of the remaining portion of the plan by the Planning Board of the City or Town in which it is located.

4.2 CURBS AND BERMS

4.2.1 Granite Curb

Unless otherwise specified by the Planning Board, granite curbs of the dimensions given for granite curbs (Section M.9.04.1) Type VA4 shall be provided in the following locations:

- 4.2.1.1 Streets in a non-residential subdivision, and all Major Streets: Along each edge of the roadway for the full length of the street.
- 4.2.1.2 All Other Streets

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- a) At intersections along the paving edge the distance of arcs of the curves plus a straight section of eight feet (8') at each end of said arcs.
 - b) Along each edge of the roadway where the grade exceeds two percent (2%)
 - c) Along each edge of the roadway on all curves with a radius of less than two hundred and fifty feet (250').

4.2.2 Bituminous Curb

Except where granite curbing has been required, the edges of a street shall be provided with a bituminous concrete low profile "Cape Cod" berm along both edges of the roadway for the full length of the roadway.

4.3 CURB CUTS AND DRIVEWAY OPENINGS

- 4.3.1 Driveways in subdivisions containing one (1) and/or two (2) family dwellings only shall be at least twelve feet (12') wide, have a curb return at the roadway of two feet (2') in radius, and shall have an opening of at least sixteen feet (16') at the gutter line.
- 4.3.2 Driveways for multiple dwellings and all non-residential uses shall be at least sixteen feet (16') wide, have a curb return at the roadway of two feet (2') in radius, and shall have an opening of at least twenty feet (20') at the gutter line.
- 4.3.3 There shall be at least 50 feet between the side right of way lines of intersecting ways (as measured from the outer edge of the radius) and a driveway as measured along the frontage.
- 4.3.4 Driveway openings shall not contain catch basins.
- 4.3.5 Driveways or other curb cut openings shall be designed so that surface runoff can neither enter nor leave the road right of way.
- 4.3.6 All curb cuts and Driveway Openings shall be designed and constructed in conformance with the Town of Grafton Driveway Regulations, as may be amended.

4.4 OPEN SPACES (MGL Ch 41 § 81U)

- 4.4.1 Before approval of a plan, the Board may also require the plan to show a park or parks suitably located for playground or recreation purposes or for providing light and air, pursuant to MGL Ch 41 S. 81U. The park or parks shall not be unreasonable in area in relation to the land being subdivided and to the prospective uses of such land, and shall be at least equal to one (1) acre of land for each twenty (20) single family dwelling units or fraction thereof or one thousand five hundred (1500) square feet for each other dwelling unit shown on the plan, and for all non-residential subdivisions at least equal to ten percent (10%) of the land area. The Board may, by appropriate endorsement of the plan, require that no building be erected upon such park or parks without its approval for a period of three (3) years.

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- 4.4.2 Each area reserved for such purpose shall be of suitable area, dimensions and topography for use as a natural playground. The area or areas shall be so located as to serve adequately all parts of the subdivision as approved by the Board.
- 4.4.3 The Board may require that the area or areas reserved shall be located and laid out so as to be used in conjunction with public and semi-public open spaces or with similar areas of adjoining subdivisions or of probable subdivisions. Any land so reserved shall be graded to dispose properly of surface water and shall be left in condition for the purpose intended, as required by the Board.
- 4.4.4 The Town shall have the right to acquire ownership of same as provided in MGL Ch. 41 Section 81-Q.
- 4.4.4.1 Any applicant with a Definitive Plan on which open space areas are to be transferred to the Town shall provide the Town with clear title to such land, in the form of a quitclaim deed and a title certificate upon approval of such Definitive Plan by the Planning Board.
- 4.4.4.2 In areas designated as open spaces in a Definitive Plan, if such areas have been environmentally damaged prior to the completion of the development as a result of soil removal, harvesting of trees or other natural features, refuse disposal or any other activity deemed inappropriate with proposed uses of the open space, the developer shall restore or improve the condition and appearance of the open space area. The Planning Board shall require the posting of a bond or other appropriate form of performance guarantee to ensure such restoration or improvement.

4.5 PROTECTION OF NATURAL FEATURES

- 4.5.1 Due regard shall be shown for all natural features, such as trees, wooded areas, water courses, scenic points, historic spots, and similar community assets, which, if preserved, will add attractiveness and value to the subdivision. Any clearing, backfilling, cutting, thinning or other disturbance to trees twelve inches (12") or over in diameter measured four feet (4') above finished ground level located within the street right of way and the minimum front setback distance or other natural vegetation shall be prohibited unless deemed both proper by the Board and not in conflict or contradiction to the intent of Section 4.9.1. Any such proposed clearing shall be shown on the plan and written reasons therefore may be requested by the Board.
- 4.5.2 Tree wells or retaining walls should be installed when and as requested by the Superintendent of Streets for suitable grading around trees. Tree wells or retaining walls shall be of such design as to meet the standards as set forth in the Tree Experts Manual or some similar publication acceptable to the Board.

4.6 LOT DRAINAGE

- 4.6.1 Lots shall be prepared and graded in such a manner that development of one lot shall not cause detrimental drainage on another lot (either within or outside the subdivision) or onto streets either during construction or upon completion.. Any necessary drainage easements shall be a minimum width of twenty five feet (25').

4.7 UTILITIES

4.7.1 General

- 4.7.1.1 All required utilities exclusive of transformers shall be placed underground at the time of initial construction in accordance with Schedules A and B. Required utilities include water, sewer, storm drainage, telephone, electricity, gas, wiring for street lights, fire alarm systems and cable TV unless otherwise specified by the Board.
- 4.7.1.2 Where adjacent property is not subdivided, or where all the property of the Applicant is not being subdivided at the same time, provision shall be made for the extension of the utility system by continuing the mains the full length of streets and to the exterior limits of the subdivision at such grade and size which will, in the opinion of the Board, permit their proper extension at a later date in conformance with all regulations governing the design and installation of such utility.
- 4.7.1.3 Location and Placement (MHD Section 201, 220, 230)
All drain, sewer, gas, water pipes, telephone, electricity, fire alarm systems, cable TV and other underground utilities and other structures shall be installed to a point a minimum of two (2) feet outside the back edge of the sidewalk, or, if there is none, the line which would otherwise be the required back edge at the property line, before the placing of the sub-base, gravel base course, sidewalks or pavement.
- 4.7.1.4 Connections for drain, water, gas, sewer, electric, cable TV, telephone and other underground utility service from the primary utility structure in the way to the exterior line of the way shall be constructed for each lot whether or not there is a building thereon, except that the Board may waive such requirement, in whole, or in part, in the case of a lot to be permanently used for a park, playground or for any other purpose for which, in the opinion of the Board, such connections shall not be required.

4.7.2 Sewerage

- Connection to public sewer is required, at the expense of the applicant, in the following cases. In all cases, the design and installation of sewers shall be in conformance with the rules and regulations of, and conditional upon approval by the Board of Sewer Commissioners. In all cases, the distance measurement shall be in a straight, horizontal line ("as the crow flies") from the nearest public sewer to the nearest point of the subdivision as shown on the Definitive Plan and as determined by the Planning Board.
- 4.7.2.1 If a public sewage system is located within two thousand feet (2000') of a subdivision, all lots shall be connected to the public sewage system by the developer.
- 4.7.2.2 If a public sewage system is planned to be installed within two thousand feet (2000') of any subdivision within five (5) years of the date of submission of the Definitive Plan as indicated by prior Town Meeting action, the sewer laterals shall be installed by the developer to the property line and to every lot, to be connected later to the public sewerage system.

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- 4.7.2.3 If a public sewage system can be connected to any point of the subdivision using a gravity flow, and in other cases where the Board deems it appropriate, then all lots within the subdivision shall be so connected.
- 4.7.2.4 Should the Board of Sewer Commissioners require larger mains with the capacity to serve the entire developable drainage basin, or if the Town master sewerage plan shows larger mains to be installed in the future than are required to serve the proposed subdivision, or shows other improvements or extensions within the limits of the subdivision not required to service said subdivision, the developer shall install, at his own cost, such mains or other improvements according to such plan.
- 4.7.2.5 Sewer Plans (linen or Mylar) shall be submitted to the Board of Sewer Commissioners for its signatures, and a copy of the approved plan shall be filed with the Planning Board prior to endorsement of the Definitive Plans. If the installation of the sewerage is not in accordance with the requirements and standards of the Grafton Board of Sewer Commissioners, the work shall be stopped until the unacceptable sewerage is removed and replaced in a manner acceptable to the Town.
- 4.7.2.6 In the event the applicant seeks permission to use an on-site sewage disposal system rather than the municipal sewer system as required by these Regulations, the Planning Board will rely heavily on the input of the Board of Sewer Commissioners and the Board of Health. However, in the event the on site sewage disposal system may be located in an area designated as “severely limited” on the map entitled “Soil Limitations for Septic Tank Sewage Disposal, Town of Grafton, Worcester County, Massachusetts” developed by the US Department of Agriculture, Soil Conservation Service in cooperation with the Worcester Conservation District, February 1973, or its successors, additional subdivision and/or infrastructure design and/or construction measures may be required by the Planning Board.
- 4.7.2.7 If public sewerage connections are not required according to the above, or if the planned public sewerage system will not have been installed to within the required distance of the proposed subdivision, private on-lot sewerage systems as approved by the Grafton Board of Health shall be installed. The on-lot facility shall be located in the front yard wherever practical to facilitate connections to the eventual public sewerage system. Due consideration shall be given to surface and subsurface soil conditions, drainage and topography in the location of such on-lot facilities.

4.7.3 Water

- 4.7.3.1 Every structure shall be connected to and serviced by operating facilities of a municipal water supplier, or of a public utility franchised to furnish water to the district within which the subdivision is located, or a source approved by the Town Board of Health and the Fire Department.
- 4.7.3.2 If lots will be served by a private well or private water system, the requirements of the Board of Health shall govern the design of the well or system. Where private wells are used, water mains as described in this Section shall be installed.

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- 4.7.3.3 If a public water system is located within two thousand feet (2000') of the subdivision, or other cases where the Board deems it appropriate, all lots shall be connected to the public water system by the developer unless the water district or appropriate utility specifies otherwise. Design and installation of water systems shall be in conformance with the rules and regulations of the appropriate water utility. The distance measurement shall be in a straight, horizontal line ("as the crow flies") from the nearest public water to the nearest point of the subdivision as shown on the Definitive Plan and as determined by the Planning Board.

4.7.4 Gas

Mains may be installed, if gas connection is available, under the sidewalk or under the grass strip with three feet (3') of cover or as required by the appropriate utility.

4.7.5 Electricity

The Board may permit transformers, switches, and other such equipment to be placed on the ground in approved locations, screened from view with evergreen shrubbery.

4.7.6 Lighting

Street lighting shall be located, at a minimum, at intersections and every 300 feet and shall be in accordance with all requirements of the Board of Selectmen and utility provider and as required by the Planning Board.

4.7.7 Fire Hydrants

- 4.7.7.1 Hydrants shall be provided every five hundred running feet (500') or portion thereof on one (1) side of each street.
- a) A hydrant shall in all cases be installed at the terminal end of each water main.
 - b) A hydrant shall be located on each new main within five hundred feet (500') of the nearest supply main or, if no hydrants exist, within two hundred feet (200') of the connecting point and, where practical, at all road intersections.
- 4.7.7.2 Each hydrant shall be served directly from the water main by a lateral connection with not less than a six inch (6") inside diameter.
- 4.7.7.3 Hydrant type, size and make, direction and pitch of threads shall be approved by the Fire Department.

4.7.8 Stormwater Management

In addition to the following sections, all stormwater management calculations and designs shall be in accordance with the Stormwater Management Guidelines issued by the Massachusetts Department of Environmental Protection and regulations promulgated in

accordance with those Guidelines. This applies to all facilities, regardless of their proximity to areas regulated by the Wetland Protection Act. Any deviations from the Guidelines shall require the express approval of the Planning Board.

- 4.7.8.1 Storm drains, culverts, ditches and related installations, including catch basins, gutters and manholes shall be installed as needed, in the opinion of the Board, to provide adequate disposal of surface and subsurface water, including control of erosion, subsurface water, flooding, and standing water from or in the subdivision and adjacent land. The drainage system shall be designed by methods based on the Rational Formula and methods contained in the United States Soil Conservation Service URBAN HYDROLOGY FOR SMALL WATERSHEDS, Technical Release Number 55. The Board may require a more intense design storm frequency to be used in any situation which in its judgment requires that a greater degree of protection should be afforded to public or private property.
- 4.7.8.2 Systems for infiltration, detention or attenuation of storms shall be designed for 100 year frequency storm and shall not cause water to be discharged within 10 feet of the perimeter of the subdivision. All other drainage facilities shall be designed for a 10 year frequency storm, at a minimum.
- 4.7.8.3 Catch basins, curb inlets and manholes shall be located as required to maintain the drainage area free of temporarily ponded runoff and to avoid excessive accumulations of surface flow on or adjacent to public ways or off existing ways onto the proposed way. In no instance shall catch basins be located along a driveway cut. Manholes shall be spaced not over three hundred (300') apart on straight runs and at all changes in alignment or grade. Where desirable in the opinion of the Board because of special features of the terrain, curved alignment of pipe between manholes may be allowed. It is not to be interpreted that provision for curved alignment constitutes general acceptance of such methods of construction and every effort must be made in the design to avoid such installations.
- 4.7.8.4 Proper connections shall be made with any existing drains in adjacent streets or easements. Where property adjacent to the subdivision has not been subdivided, drains installed within the subdivision shall be of such design as to make feasible their connection with drains installed in such adjacent property when subdivided.
- 4.7.8.5 Drainage Layer. Any road constructed in an area known to be wet, or where groundwater is or has been within two (2) feet of finish grade, or in an area of four (4) feet or greater cut depth, or any area where the Planning Board determines it to be appropriate, shall have a drainage layer below the gravel subbase in accordance with Section 5 of these Regulations.
- 4.7.8.6 Subdrains. Where a drainage layer is required, or at any location where a groundwater condition may exist, subdrains shall be installed in accordance with Section 5 of these Regulations.

4.8 MONUMENTS (BOUNDS)

- 4.8.1 Granite bounds shall be set to locate the sidelines of both sides of rights-of-way, at all street intersections, at all points of change in direction of curvature of sideline points, and of designated open space areas and of municipal easements (such as access, drainage, future street or utility, etc.) and of reserved rights of way and other points as determined by the

Planning Board. Intermittent bounds shall be set on all tangents and curves of a length exceeding eight hundred feet (800').

- 4.8.2 Sight lines between bounds shall not be obscured; utility poles shall not be set on a right-of-way sideline. A clearance of at least three feet (3') from a bound point shall be provided to permit free use of the bound both laterally and along sidelines.

4.9 SIDEWALKS, GRASS PLOTS, TREES

- 4.9.1 Sidewalks, grass plots and trees shall be provided for the full length of each street. Sidewalks shall be provided on one side (preferably north, west sides) of Minor Streets and on both sides of Major Streets. Sidewalks shall be at least four (4) feet wide, shall conform to all Access codes, and shall be located as shown on the plans and profiles required by these Regulations.
- 4.9.2 Trees, shrubs, fences and other items shall not be located so as to obstruct vision at intersections.
- 4.9.3 In areas where ledge is encountered in road cuts, a strip at least five feet (5') wide with a slope of one-quarter inch (1/4") per foot towards the road shall be provided for the length of the ledge. Such strip shall be located outside, and immediately adjacent to, the road right of way. The purpose of this strip is to prevent falling pieces of ledge from injuring anyone or anything within the street right-of-way.
- 4.9.4 Street trees shall be located outside of the right-of-way or, at the discretion of the Board, within the unpaved portion of the right-of-way as shown in the profile and Standard Cross-Sections, Schedules A and B, approximately at forty foot (40') intervals. They shall be at least twelve feet (12') in height and two inches (2") in diameter measured four feet (4') above the approved grade, unless otherwise required by the Tree Warden and/or Planning Board, and be not closer than five feet (5') nor more than ten feet (10') from said right-of-way line unless otherwise approved by the Board.

4.10 TRAILS, BIKEWAYS AND WALKWAYS

- 4.10.1 Trails, public bikeways or pedestrian walkways may be required by the Board to provide circulation or access to schools, playgrounds, parks, shopping, transportation, open space and/or community facilities or for such other reason as the Board may determine. These may or may not be part of normal sidewalk provisions, but they shall not be a part of any lot in the subdivision.
- 4.10.2 The minimum right-of-way width shall be twenty-five feet (25') unless sufficient planting, fencing, or other buffering between the way and adjacent property is provided so that, in the opinion of the Board, the right-of-way may be reduced to a minimum of fifteen feet (15').
- 4.10.3 The minimum width of the finished surface shall be six feet (6').

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- 4.10.4 The maximum gradient shall be eight percent (8%) for segments less than one hundred feet (100') in length; five percent (5%) elsewhere.
- 4.10.5 The minimum centerline radius shall be twenty-five feet (25').

4.11 EASEMENTS

- 4.11.1 Where utilities cross lots or are parallel to rear or side lot lines, easements shall be provided at a width of at least twenty-five feet (25').
- 4.11.2 Where a subdivision is traversed by a water course, drainage way, channel or stream, the Board shall require a storm water easement or drainage right-of-way of adequate width and proper side slope as determined by the Planning Board to conform substantially to the lines of such water course, drainage way, channel or stream and to provide for construction or other necessary purposes. In no case shall the width be less than twenty feet (20') or the side slope be steeper than two (2) horizontal to one (1) vertical.
- 4.11.3 Access easements shall be provided, if required by the Board, for use by emergency vehicles and for the benefit of the Town. They shall have a minimum width of twenty five feet (25').
- 4.11.4 Bridle paths, footpath easements and access easements (e.g., to conservation areas) may be required by the Planning Board. They shall be at least twenty feet (20') in width.
- 4.11.5 Wherever possible easements along rear lot lines shall be continuous to the street at the end of the block to connect with the adjoining blocks in the shortest direct line.

4.12 COMMON DRIVEWAYS

4.12.1 Common driveways shall meet the following standards:

- 4.12.1.1 Minimum Width: Eighteen feet (18')
- 4.12.1.2 Maximum Grade:..... Ten percent (10%)
- 4.12.1.3 Maximum Length: Five Hundred Feet (500')
- 4.12.1.4 Curb Cut: Not nearer than fifty feet (50') from the side right of way lines of intersecting ways (as measured from the outer edge of the radius) and the Common Drive, as measured along the frontage
- 4.12.1.5 In addition, the design shall, in the opinion of the Planning Board, assure adequate safety for emergency vehicles, water service and hydrants and shall provide for adequate drainage of surface waters. Additional constructed width, curbing, drainage, reduced grades or other design and construction provisions may therefore be required. This will be particularly applicable in the case where the Common Driveway, if allowed, is proposed to serve any use(s) other than single family residences.

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- 4.12.1.6 For residential uses, a common driveway shall not serve more than three (3) lots for detached one-family dwellings, or four (4) dwelling units for detached two-family dwellings.
 - 4.12.1.7 Common driveways, including all associated easements, shall be located entirely within the boundaries of the lots to be served by such driveway.

4.12.2 Covenant Concerning a Common Driveway

- 4.12.2.1 Before the Board shall approve any Definitive Plan or a Subdivision whereon there is shown any way classified as a common driveway, it shall have first obtained from the subdivider a covenant or agreement satisfactory to the Planning Board that the common driveway shall remain a private way and be maintained by the abutters, unless it is both redesigned and improved, at no cost to the Town, in accordance with the minimum standards herein prescribed for a major or minor street, is reclassified by the Planning Board and is accepted by the Town as provided by law.
- 4.12.2.2 In the event water lines are installed in a common driveway, the covenant or agreement in regard to the street and/or driveway shall provide that the owner or owners of the common driveway shall be solely responsible for the maintenance of the water installation for the first five years after which the water system may be conveyed to the appropriate water utility together with a twenty (20) foot wide utility easement if the Water Utility will accept responsibility for maintenance of the system.
- 4.12.2.3 Owners of land abutting on a common driveway shall maintain and plow said driveway and shall provide all rubbish collection at their own expense.
- 4.12.3 A declaration of covenants, easements and restrictions for the use and maintenance of said common drives must be approved by the Planning Board, and shall include arrangements satisfactory to the Board for maintenance and snow plowing. All such covenants run with the land, in perpetuity.